

Atty. Docket No. CPAC.1001-1
Appl. No. 09/802,443

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This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (currently amended): A method for connecting a die to a leadframe, comprising:
forming metal bumps on the die,
contacting the bumps with bonding fingers on a leadframe,
heating the bumps without melting, and
pressing the bumps against the bonding fingers.

Claim 2 (original): The method of claim 1 wherein the step of forming the metal bumps comprises stud bumping.

Claim 3 (original): The method of claim 1 wherein the step of forming the metal bumps comprises electroplating.

AI Claim 4 (original): The method of claim 1 wherein the metal bumps comprise gold.

Claim 5 (original): The method of claim 1 wherein the step of heating the bumps comprises heating the die.

Claim 6 (original): The method of claim 1, further comprising
supporting the bonding fingers on a substrate, and
supporting the die by a press,
wherein the step of pressing the bumps against the bonding fingers comprises applying a force to move the die and the substrate toward one another.

Claim 7 (original): The method of claim 1 wherein the heating step and the pressing step are carried out at a temperature and pressure sufficient to result in deformation of the

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bump material to an extent of between about 15% and about 20% of the original bump height.

Claim 8 (currently amended): The method of claim 7 1 wherein the metal bumps comprise gold, and the heating step comprises heating the bumps to a temperature in the range about 100° C. to about 400° C., and the pressing step comprises applying a force equivalent to vertically loading in the range about 10 grams to 250 grams per bump.

Claim 9 (original): The method of claim 1, further comprising the steps, prior to contacting the bumps with the binding fingers of the leadframe, of
supporting the leadframe on a substrate, and
dispensing a measured quantity of a fill material onto the substrate within the leadframe binding fingers.

Claim 10 (original): The method of claim 9 wherein the fill material comprises an adhesive resin.

Claim 11 (currently amended): A method for forming a plurality of chip-in-leadframe packages, comprising

providing a plurality of leadframes each comprising a set of bonding fingers,
providing a plurality of dies each having a set of metal bumps formed thereon,
positioning the leadframes onto a support,
placing the dies onto the leadframes such that each set of bumps contacts a set of bonding fingers,
heating the bumps without melting, and
pressing the dies against the leadframes to compress the bumps onto the bonding fingers.

Claim 12 (original): The method of claim 11 wherein the metal bumps comprise gold, and the heating step comprises heating the bumps to a temperature in the range about 100° C. to about 400° C., and the pressing step comprises applying a force equivalent to vertically loading in the range about 10 grams to 250 grams per bump.

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Claim 13 (original): The method of claim 11, further comprising the steps, prior to contacting the bumps with the binding fingers of the leadframe, of
supporting the leadframe on a substrate, and
dispensing a measured quantity of a fill material onto the substrate within each set of leadframe binding fingers.

Claim 14 (original): The method of claim 11, further comprising the steps of singulating the chip-in-leadframe packages.

Claim 15 (original): A chip-in-leadframe package made according to the method of claim 14.

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Claim 16 (original): The package of claim 15 wherein the die is situated cavity upward in relation to the set of bonding fingers.

Claim 17 (original): The package of claim 15 wherein the die is situated cavity downward in relation to the set of bonding fingers.

Claim 18 (original): The package of claim 15 wherein the leads fan inwardly.

Claim 19 (original): The package of claim 15 wherein the leads fan outwardly.

Claim 20 (new): The method of claim 11 wherein the heating step and the pressing step are carried out at a temperature and pressure sufficient to result in deformation of the bump material to an extent of between about 15% and about 20% of the original bump height.